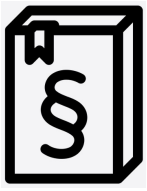
# New Air Quality Standards for Switzerland

## Recommendations by the Swiss Federal Commission for Air Hygiene

Swiss TPH
Swiss Tropical and Public Health Institute
Schweizerisches Tropen- und Public Health-Institut
Institut Tropical et de Santé Publique Suisse
*Associated Institute of the University of Basel*

**Kutlar Joss Meltem[1,2,3], Achermann Beat[3], Ammann Christof[3], Baltensperger Urs[3], Buchmann Brigitte[3], Colombo Luca[3], Emmenegger Lukas[3], Flückiger Alexandre[3], Gygax Hans[3], Kren Linda[3], Kunz Pierre[3], Rothen-Rutishauser Barbara[3], von Känel Andrea[3], Künzli Nino[1,2,3]**

[1]Swiss Tropical and Public Health Institute, Allschwil; [2]University of Basel, Basel, Switzerland; [3]Federal Commission for Air Hygiene, Switzerland



### Background

Switzerland's Environmental Protection Act calls for measures on ambient limit values and air pollution that protect the environment and the health of the entire population, including particularly sensitive groups.

### Methods

Reflecting the WHO recommendations, the statutory mandate, and current levels of air pollution, the Federal Commission for Air Hygiene (FCAH) has assessed the situation.

### Results

The FCAH recommends amending the Air Pollution Control Ordinance (OAPC) for six pollutants ($SO_2$, $NO_2$, CO, $O_3$, PM10, PM2.5) to align the ambient air quality standards with the WHO's revised Air Quality Guideline (AQG) levels.

| Pollutant | Averaging time | WHO AQG 2021 | Current OAPC ambient limit value | FCAH recommendation 2023 |
|---|---|---|---|---|
| Nitrogen dioxide ($NO_2$) µg/m³ | Annual average | 10 | 30 | 10 |
| | 95% of ½h mean value for a year | - | 100 | remove |
| | 24h mean value | 25 | 80 | 25 |
| Carbon monoxide (CO) mg/m³ | 24h mean value | 4 | 8 | 4 |
| Ozone ($O_3$) µg/m³ | Summer season | 60 | - | 60 |
| | 98% of ½h mean value for a month | - | 100 | 100 |
| | 8h mean value | 100 | - | - |
| | 1h mean value | - | 120 | 120 |
| Particulate matter (PM10) µg/m³ | Annual average | 15 | 20 | 15 |
| | 24h mean value | 45 | 50 | 45 |
| Particulate matter (PM2.5) µg/m³ | Annual average | 5 | 10 | 5 |
| | 24h mean value | 15 | - | 15 |
| Sulphur dioxide ($SO_2$) µg/m³ | Annual average and new mean value over winter half-year | - | 30 | 20 |
| | 24h mean value | 40 | 100 | 40 |

### Conclusion

National and international research over the past 20 years has shown that air pollutants have adverse health effects even at significantly lower concentrations than previous studies have shown. A recent health risk assessment* commissioned by the Swiss Federal Office for the Environment revealed that an additional 2'200 premature deaths could be avoided if the Swiss air quality would comply with the WHO AQG 2021. Therefore, more ambitious air quality standards are proposed, promising additional health gains for the Swiss population.

**References**

Eidgenössische Kommission für Lufthygiene (EKL). (2023). Die neuen WHO-Luftqualitätsrichtwerte 2021 und ihre Bedeutung für die Schweizer Luftreinhalte-Verordnung.

*Castro, A., Kutlar Joss, M., & Röösli, M. (2023). Quantifizierung des Gesundheitsnutzens der neuen Luftqualitätsleitlinien der Weltgesundheitsorganisation in der Schweiz.

https://www.swisstph.ch/fileadmin/user_upload/SwissTPH/Institute/Ludok/Aktuelle_Berichte/SwissTPH2023_Gesundheitsnutzen_AQG_WHO_2021.pdf

Kreuzstrasse 2, 4123 Allschwil, Switzerland
+41(0)61 284 81 11, www.swisstph.ch